

# An Approach to Health Planning

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**T**HE PRESIDENT, in a memorandum dated August 23, 1965, addressed to the heads of all Federal executive departments and agencies, made the following statements:

At a cabinet meeting today, I announced that we would begin to introduce a new planning-programing-budgeting system in Government. This will be a large and important job. I want all of you to devote personal attention to it . . . You should begin at once to develop plans for the creation of your program and planning staffs. I want the best people possible for these staffs, both from within your organizations and from outside Government.

With these words, the system now commonly referred to as "P-P-B" was officially inaugurated in the Federal Government as a major tool for assuring that the citizens of this country receive the maximum return for their Federal tax investment.

## Advantages of P-P-B System

Planning-programing-budgeting (P-P-B) is the process by which objectives and resources and the interrelations among them are taken into account to achieve a coherent and comprehensive program of action for an organization. Input is related to results so that more efficient and effective methods for attainment of goals is afforded than with the conventional planning and budgeting process.

The need for changes in the budgetary process has long been recognized. In fact, program

budgeting as a principle had been accepted before the President's memorandum. It was not until that memorandum, however, that it became a mandatory part of the planning process of the Executive branch of the U.S. Government.

P-P-B can help correct two major deficiencies in the classic process, namely, the inability of program managers to evaluate similar programs on a common base and to do so within a restricted time frame. Under the classic process, programs or activities were propounded and considered mainly within the bureaus or departments in which they were carried out. Even if two or more bureaus or departments conducted activities that were essentially complementary or even competitive, those activities were often not considered together.

The President's annual budget message, however, is arranged in terms of major programs that cut across departmental lines. For instance, all expenditures in natural resources are grouped as one major program area, regardless of whether one or several departments are involved. This grouping has not meant that budgeting decisions are necessarily made for broad program areas. The necessary information has not been available to permit estimating the total needs in such broad program areas in a way that would permit meaningful comparisons and determinations of the relative importance of various programs.

The Federal budget is confined to estimating needs for the coming year, usually including the figures for the year just completed as well as estimates of expenditures for the current year. Such a method may be adequate for many administrative purposes, but it is not adequate in such areas as planning the procurement of

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items requiring a long lead time nor for construction projects. Whether financial projections covering a number of years should be published in the formal budget is an open question. There can be little doubt, however, that they should be available to the Executive branch and to the congressional authorities who review the budget.

The planning-programing-budgeting system can help in planning programs so that the best choice among alternate courses of action can be made, based on sound knowledge of the implications of each alternative. The system should also enable management to review activities of an organization in relation to overall system goals.

In the health area, P-P-B entails seven procedures.

1. Appraisal and comparison of health and various other activities in terms of their relative contributions to national health objectives.
2. Determination of how given objectives can be attained with minimum expenditure of resources.
3. Projection of health activities over a long enough period to provide proper perspective.
4. Consideration of the relative contributions of private and public activities to national health objectives.
5. Revision of objectives, programs, and budgets in the light of experience and changing circumstances.
6. Explicit recognition of the need to demonstrate results for effort expended.
7. Application of new analytical techniques as an aid to, but not a replacement for, leadership judgment at all levels.

Advantages of the P-P-B system accrue to top-level management in the form of (a) increased knowledge of program accomplishment as a result of collection and analysis of highly specific data, (b) identification of alternative courses of action, so that management can better understand the respective costs and benefits of each and their future implications, (c) comparisons among programs based on cost-benefit analysis, and (d) continual review and evaluation of each program in terms of its objectives.

Among the advantages of the system to the program manager is that it provides clearly defined goals to guide him in formulating and operating his own program. It also enables him to propose meaningful changes in objectives as seen from his operational vantage point.

The P-P-B system provides the program

manager with guidelines as to the data needed for meaningful evaluation, analysis, and operations research. These guidelines will aid him in identifying the information he needs to appraise and improve his program and also the data needed to supply management at higher levels with concrete evidence of the program's soundness and effectiveness. Under the P-P-B system, the program manager can provide more specific instruction to his program staff, thereby improving their efficiency. The system assures the manager that his program will receive due consideration in relation to other programs when systemwide modifications are being planned. It also enables him to plan more confidently for long-range program development than he could with conventional methods. Yet he is assured of flexibility in case of unforeseeable circumstances.

Each organizational unit, from the highest to the lowest management echelon, must design its individual planning-programing-budgeting system to be generally consistent with the system of the parent organization, but keep it detailed enough to accommodate the unit's specific activities. Planning, performance budgeting, cost-benefit analysis, choice of alternative programs, and evaluation must be completely time-phased.

### **A Health Planning System**

The approach to health program planning to be described incorporates the planning-programing-budgeting process. It should be applicable in part, if not entirely, to health program planning at several organizational levels.

Agencies and organizations will usually benefit from a systematized approach to program planning. Many agencies fail to consider their programs in the light of the overall health problems of the community, State, or nation or to make meaningful comparisons between alternative programs. The tendency is to select and justify programs on the basis of intuition or tradition.

Much impetus has been given to the concept of comprehensive, communitywide planning by the Comprehensive Health Planning and Public Health Services Amendments of 1966, Public Law 89-749, a law which encourages broad planning for coordinated use of all

health and health-related resources in reducing health problems. Successful comprehensive planning requires the participation of all agencies and organizations which contribute to the provision of health services or to their appropriate utilization. The actual and potential capabilities of each organization are considered in relation to overall health objectives. In such planning, consideration is thus given to the capabilities and contributions of nonhealth agencies, organizations, and systems which are essential to the effective delivery of health services.

### Definitions

Before discussing the planning methodology, we need to define a few terms with special meanings which are used in this discussion.

*Mission.* Any agency or organization participating in planning health programs will necessarily have a mission imposed by legislation, regulation, charter, or other instrument. That mission will describe the general functions or services which the organization is to perform and will specify the limits of its jurisdiction and authority. This mission remains more or less fixed unless changed by law or other official action. For example, the mission of a State or local health department might be the protection and advancement of the public health of the population of that State or community within certain legally specified limitations. The term "mission" is to be distinguished from "goals" and "objectives."

*Goals.* Both goals and objectives are established by the leaders of an agency or organization. A goal is the long-range, specified accomplishment toward which programs are directed. Goals may be changed from time to time as leaders deem necessary. The goal itself does not fix a period for its achievement. It may be idealistic or ambitious as judgment dictates, but it must be consistent with the mission. A health goal is usually stated in terms of completely overcoming a health problem or of reducing it to a specified level. A goal is not necessarily limited by current resources or current knowledge.

The broadest goals will be those set up by agencies responsible for comprehensive planning. An individual agency or organization

covered by a comprehensive plan will necessarily establish less broad goals, which will be appropriate to the individual organization's respective mission and yet consistent with the overall goals. The goal of a county health department, for example, might be to reduce disease to the same level as the average for the United States as measured by a combination of morbidity and mortality.

*Objectives.* A health objective is stated in terms of achieving, during a specified period, a measured amount of progress toward a goal or of maintaining a measured level of health as required by a goal. We distinguish between operational health objectives and program objectives. The broader term, "operational health objectives," denotes a measured and specific kind of progress toward a goal, but does not specify how this progress is to be achieved. Thus, an agency for comprehensive community planning might seek to decrease mortality from influenza to 49 deaths per 100,000 per annum by the end of 2 years.

A program objective, on the other hand, establishes a measured amount of progress to be made toward a health objective through a specific plan of action. An example might be to immunize during the next year 80 percent of the persons at high risk of influenza.

### Comprehensive Health Plan

A comprehensive health plan means a formal written commitment by the properly designated authorities for future action designed to elevate or maintain the health of all persons within the legal jurisdiction of the said authorities.

The plan must be comprehensive geographically and in population coverage. In addition, it should include comprehensive plans of action for all agencies engaged in mitigating any of the causes of death and illness or the multiple factors related to any of these causes. It should be constructed on the general framework of a goal stated in terms of the population's health status. Additionally, the plan delineating the health problems, their causes, and related factors should list the health objectives, and these objectives should be quantified in terms of morbidity in its broadest sense and of mortality and should be projected over a specified period. The health objectives should be supported by

program objectives, quantified as to the factors to be ameliorated over the same period.

Thus, the comprehensive plan must quantify the activities which the specified agencies or persons must carry out to accomplish the program objectives—objectives which in turn support the health objectives and, ultimately, the health goal. The projected activities or plans of action are the heart of the comprehensive health plan. They constitute a commitment to do something to help people attain a desirable health status. Plans of action cannot be limited to classic health activities; they must reflect consideration of the activities of other agencies having responsibilities and authority for dealing with the factors which contribute to health problems. For example, socioeconomic conditions, education, housing conditions, and highway construction may adversely affect a population's health status, yet they are not within the direct purview of official health agencies. Thus, a comprehensive health plan must provide for consideration of plans of action to be carried out by nonhealth agencies. All the plans, however, are directed toward alleviation of the preidentified factors affecting health.

### Steps in Comprehensive Health Planning

1. *Determining status of the community.* Identification of a community's status according to its problem areas is the logical first step in comprehensive health planning. Placement of health problems in context with all the other community problems permits identification of a community's health status in terms of its major health programs. Community health and social problems can all be defined as situations or conditions which have, or could have, an adverse effect on the people's total well-being. As an example, we might list one health problem as follows:

Health problem X: high mortality and morbidity and a large number of days of restricted activity caused by diseases of the respiratory system. Statistical analysis of data on mortality, morbidity, and restricted activity days shows respiratory diseases to be the third leading health problem in the State. Death rates in the State for these diseases are 2.4 times the rate for the general U.S. population. . . .

2. *Setting community goals.* The second step in planning is the establishment of ulti-

mate community goals, including a health goal. These goals must define what will occur when an identified need is fully met. They must be measurable, but as stated before, they need not necessarily be postured on the basis of currently available resources or the existing state of technology. A community might have as a goal raising its health status to a level comparable to that of the general population as measured by a combination of morbidity, mortality, and lost productive potential, quantified by use of a health problem index.

3. *Community attitudes, resources, and problems.* A community's attitudes, resources, and problems must be determined, since their evaluation is fundamental to successful program development. The cultural and religious mores of a community will affect its understanding and acceptance of modern health practices. These mores are among the attitudes of a population that need to be fully investigated, understood by professionals, and quantified to the extent possible.

During formulation of the comprehensive plan, the resources needed to achieve the objective and carry out the action plans must be taken into account, as well as what resources are available or anticipated. The program manager must identify existing health, educational, and welfare resources so that the total plan for alleviating social, economic, cultural, and environmental conditions can be formulated in the most practical manner possible. Just as other phases of planning are interrelated in time and content, determination of resources is a continuous consideration.

The comprehensive plan allows the program manager to use his available resources effectively. It also identifies for him the additional resources that are needed for optimum output. The kinds of resources to be considered in planning and implementing a program include personnel, equipment, supplies, facilities, and capabilities for training and research. Although many resources will come from within the organization, the program manager must identify and use those resources available from other organizations to the fullest extent possible.

4. *Analysis of health problems.* An analysis of health problems according to their causes and the contributing factors must be conducted

concurrently with the analysis of all other major community problems. (The methods of determining the magnitude of health problems will be discussed in a later paper.)

The causes of health problems are reasonably easy to identify. Influenza and pneumonia, for example, are causes of respiratory disease. Related factors include crowded housing, lack of health knowledge, and poor nutrition. Identification of these factors enables the program manager to plan activities to overcome them. Overcrowding, for example, reflects a social force which must be recognized and considered in working out a comprehensive health program. Once the health problems of a population group and the causes and factors related to those problems are identified, an outline of the optimal actions will permit identification of deficiencies in a program.

5. *Alternate plans of action.* Alternate plans of action are also needed to ameliorate, or solve, a community's problems. These alternate plans of action need to describe in writing the kind and amount of action required to overcome them. They must specify what is to be done, for and to whom, where, when, and how often. They should provide a means of measurement of progress and be related to a particular planning period.

Decisions as to the kinds and amounts of activities to be carried out are the very heart of the planning process, for thereby the program manager commits his resources, basing his decisions on his expectation of resources. Obviously, he should be fully informed as to the implications of these decisions. Besides considering the objective facts, he must keep in mind external influences which may affect his program.

If the several problems of a community are to serve as the starting point for planning action, however, a quantified optimum program for reducing or containing each problem needs to be designed. In this design, no attention is to be given to the restraints that limited resources might impose. Use of optimal programs as a reference point for health planning rests on the thesis that the scientific community can agree on discrete sets of quantified actions for the maximum reduction of health problems. The method requires a comprehensive listing of all the activities, stated quantitatively, that scientific knowl-

edge and the social conscience indicate would be most effective for attacking the various aspects of the problem in question.

Program deficiencies are merely the differences between the optimal level and the current or planned level of activities in the program. Expressed as simple fractions, ratios, or percentages, the deficiencies indicate the disparity between what could, or should, be done and what is actually being done or planned.

Planning that begins with the identification of deficiencies in programs permits the translation of problems into quantified needs for action—action which, it is believed, will reduce or eliminate the problem.

Use of the estimated-benefit-versus-cost procedure permits planning to focus more precisely on these needs and allows choices for action to be made among the identified needs. A baseline for measurement is thus provided by which a program's status and progress can be evaluated.

6. *Conduct of cost-benefit studies.* The program manager must perform cost-benefit studies on possible alternate program actions so that he may determine those which will reduce deficiencies and produce the greatest benefit at the least cost within a specific period.

Most health problems will present a wide choice of alternatives for action because of the wide array of program deficiencies that will have been identified. It is from these alternatives that choices must be made, since limited resources will usually not permit the execution of an ideal program.

Cost-benefit analysis can be defined as a scientific approach to determining, from a series of alternates, the plan or combination of plans considered best for achieving health objectives with the most prudent use of resources. In using cost-benefit analysis, the program manager must realize that for some alternate plans of action the precise cause-and-effect relationships cannot be completely defined. Professional judgment must be used in such instances and account taken of the objective facts, as well as of the external forces which have in the past, or may in the future, impinge on program actions.

7. *Setting objectives and plans of action.* Analysis of alternate plans of action makes it possible to formulate objectives for commu-

nity action programs and to spell out specific short- and long-range plans and objectives. Objectives are established to identify clearly what is to be accomplished. They enable progress toward a desired outcome to be measured periodically, thus providing feedback for program adjustment. Finally, the extent to which the objective has been achieved at a designated end point can be determined, and this determination will provide a baseline for future planning.

In a large organization, a hierarchy of objectives and activities is necessary. All work done to meet objectives at one level of the organization permits the accomplishment of objectives at each successively higher level. Moreover, the overall objective of the organization will be reached only to the extent that the objectives of each organizational component are fulfilled. No objective can be viewed completely as an isolated entity. In fact, all objectives related to a single process or program action are inseparably intertwined in the program process. They are steps in the stairway leading to a goal. Any single step of the stairway, and also its lumber and nails, is an essential component of the stairway. Weakness in a step weakens the stairway; the collapse or absence of a step may wreck the stairway.

Health objectives will usually be stated in terms of change in the status of a health problem to a specified degree within a specified period. Two special situations may occur, however, in which "change in status" may not be applicable. One, involving potential health problems, is the absence of smallpox in a population and the community's desire to maintain that condition through public health measures. In the second situation, the health problem is of such magnitude and the resources are so limited that the only practical immediate objective may be containment, that is, preventing the problem from becoming greater or more severe. In both cases, the objective is to maintain the status quo.

Time-phasing, or programing, of objectives may be long range. Ideally it is aimed at total elimination of the problem, but more realistically, at the reduction of a proportion or percentage of the problem.

An operational health objective should not be confused with, nor described as, an activity. An

activity is a program action—what workers do to accomplish a program objective. Health objectives are viewed as the desired outcome or end effect of activities or services. The statement of an operational health objective or program objective never includes the actions or procedures carried out by the agency or its personnel to reach the objective. The example in the box partially illustrates, for a hypothetical community, the processes necessary in setting objectives.

The establishment of objectives and plans of action is commonly referred to as the development of the program package. Program packages are not limited to a single year. The detailing of anticipated program actions over a more protracted period (5 years or longer) provides a more practical base for broad program development. This type of extended planning yields a solid foundation for plans for subsequent years and allows for accommodation in subsequent years to unforeseeable conditions.

The total program package includes the description and the organization of needed resources, the establishment of operational parameters, the assignment of responsibilities, and the assignment of accountability for operational activities.

8. *Making a total integrated community plan.* To develop a uniform planning-programing-budgeting system in the community, it will be necessary to evaluate all the community's problems on a common base. This evaluation will permit program tradeoffs (based on cost-benefit and cost-effectiveness studies) that will result in an integrated community program, which is designed to have impact upon the established community goals and the related objectives. At present we still must use subjective parameters of measurement. The future, however, holds the promise of refinements which should make for more uniform judgments of programs.

9. *Evaluation.* In the evaluation process, the extent to which predetermined objectives and levels of operation have been attained is determined. Even though we show evaluation as the last of nine steps, it is not just an end process in the planning cycle. Rather it is intrinsic to every stage of program planning and implementation, permitting at all stages the redefinition of problems and the reestablishment of objectives on the basis of experience. Indeed, the

planning process is not complete without a pre-determined plan for evaluation. Evaluation is the tool management uses to insure that what is planned actually takes place and by which it measures how much of a desired effect has been achieved.

In evaluating community programs, all assessment of problems and all planning should be conducted from the standpoint of the individual person in his total environment, even though this consideration will make it more difficult to pinpoint results to specific programs. Data on resources and output can then be displayed

which will reveal the interactions of the activities of various persons and agencies. An operational health objective of reducing mortality and disease, for example, might result in formulation of more aggressive objectives for programs aimed at raising economic or educational status. Likewise, activities designed to improve family living conditions would probably also raise health levels. Pinpointing results to specific programs becomes less important when benefits from a program are considered in terms of the person in his total environment. This consideration also requires that the techniques of

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## Developing Plans of Action and Setting Objectives for Community X

### *Health Problem*

Disease of the respiratory system is a major health problem in community X as measured by mortality and morbidity.

### *Causes of Health Problem*

Pneumonia (excluding pneumonia of the newborn) accounts for more than half of the deaths in the community due to respiratory diseases. Influenza accounts for one-fifth of the deaths in this category and emphysema, for another one-tenth. Other upper respiratory infections are responsible annually for 1,175 days of restricted activity per 100,000 population.

### *Factors Related to Causes*

Some important factors related to respiratory diseases are common to all populations in which socioeconomic levels prohibit a standard of living adequate to provide a suitable home environment. The incidence of these diseases is directly related to death and disability from overcrowded home conditions, inadequate housing (resulting in exposure to climatic extremes), poor nutrition, inadequate knowledge of modern health practices, inadequate medical care, and low immunization levels. In at least two metropolitan areas of the community, air pollution has been shown to contribute to, if not actually to cause, some respiratory illness. Weed pollen is also a factor, accounting especially for days of restricted activity. . . .

### *Plans of Action for Fiscal Year X (selected from alternates)*

Conduct monthly immunization clinics at each health unit.

Conduct education program through series of one-spot announcements daily on each television and radio station in the community.

State air pollution control authority will eliminate all open burning of refuse in the metropolitan area.

State department of agriculture will extend weed control programs so that they cover 60 percent of the urban area.

Self-help, long-term, low-interest-mortgage homes will replace 3 percent of the substandard homes under a program conducted by the State housing authority.

### *Program Objectives for Fiscal Year X (based on plans of action)*

To immunize against influenza 80 percent of the persons at high risk.

To provide education in modern health practice to 50 percent of the family groups.

To provide monthly public health nurse visits to 80 percent of the economically deprived homes.

To reduce air pollution in the metropolitan area by 10 percent.

To reduce average pollen count by 15 percent.

### *Operational Health Objectives (based on program objectives)*

#### **Fiscal Year X**

To decrease mortality to 49 per 100,000.

To decrease days of hospitalization to 25 per 100,000.

To decrease outpatient visits to 339 per 100,000.

To decrease days of restricted activity to 1,143 per 100,000.

#### **Fiscal Year X+1**

To decrease mortality to 45 deaths per 100,000.

To decrease days of hospitalization to 23 per 100,000.

To decrease outpatient visits to 300 per 100,000.

To decrease days of restricted activity to 1,100 per 100,000.

comprehensive health planning be implemented in such a way that health workers will exchange ideas with persons who have no direct responsibilities for the comprehensive health program but whose own programs provide limited health and health-related services to various persons in the community.

In evaluating health programs as a part of comprehensive health programing, the basic responsibility is to appraise services according to their impact on the particular problem. Such evaluation is not simple or easy. Without it, however, no plan for action can be valid or can enjoy a reasonable expectation of success. In all phases of program planning and program operations, evaluation represents a feedback constantly providing the information needed for appraising any phase of an operation and for making adjustments in that operation. It reduces the gap between foresight and hindsight, permitting a happy alliance with circumstances.

One consideration in selecting an evaluation method is who will participate in the process. Will it be done by the staff of the organization or outsiders? Another point to consider is how frequently evaluation will be carried out. Certain phases of a program may be evaluated continuously, permitting the current appraisal of actions that are required for successful program operation. In fact, the line operator responsible for achieving a specific objective needs to develop a kind of "evaluation characteristic" so that he can pinpoint the accountability for specific measurable actions.

### **Summary**

In the planning-programing-budgeting system known as P-P-B, the objectives and resources of an organization and their interrela-

tions are taken into account to formulate a comprehensive program of action for the entire organization. The system entails program packaging, which integrates the determination of problems and resources, the implementation of programs, and the process of evaluation. Thus, in the health field, planning programs center on health problems rather than on categorical activities, and the use of resources is related to expected health benefits. Cost-benefit studies of alternate plans of action make this focus possible. Long-range planning can thus be correlated with resource requirements, and a mechanism is provided for continuous evaluation of activities. The collection, storage, and use of program data can be systematized.

In applying the P-P-B system in the health field, a comprehensive health plan is developed. This plan is a formal, written commitment on the part of the appropriate authorities to take future action to elevate or maintain the health status of a population group. It has to be formulated in relation to the total community. The plan includes a goal stated in terms of health status and of health problems and their related causes and contributing factors. Health objectives, projected over a specified period, are quantified in terms of mortality, morbidity, and days of restricted activity. Program objectives, also projected over a specified period, are quantified in terms of ameliorating causes of the problems. The activities, or plans of action, to be carried out by specified agencies or persons within specified periods are also quantified.

P-P-B based health planning, if carefully done, provides an additional tool to assist the program manager in the day-by-day operation of his organization.